

**UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SEVEN NETWORKS, LLC,

Plaintiff,

v.

GOOGLE INC.,

Defendant.

Civil Action No. 2:17-cv-442

PATENT CASE

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff SEVEN Networks, LLC (“SEVEN”) files this Complaint for Patent Infringement of several United States patents as identified below (collectively, the “Patents-in-Suit”) and alleges as follows:

PARTIES

1. SEVEN is a company formed under the laws of Delaware with its principal place of business at 2660 East End Boulevard South, Marshall, Texas 75672.

2. Google Inc. is a corporation formed under the laws of Delaware with its principle place of business at 1600 Amphitheatre Parkway, Mountain View, California 94043 and may be served through its agent Corporation Service Company, 211 East 7th Street, Suite 620, Austin, Texas 78701-3218.

JURISDICTION AND VENUE

3. SEVEN brings this civil action for patent infringement under the Patent Laws of the United States, 35 U.S.C. § 1 *et. seq.*, including 35 U.S.C. §§ 271, 281-285. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338.

4. Google transacts and conducts business in this District and the State of Texas, and

is subject to the personal jurisdiction of this Court. For example, Google maintains offices in Dallas and Austin. Additionally, Google promotes and sells its products, such as its Pixel smartphone, through its online store (<https://store.google.com/>) that is available and accessed by residents of this District and the State of Texas. Google had previously sold other products such as the Nexus smartphone through this website as well.

5. SEVEN's causes of action arise, at least in part, from Google's business contacts and activities in this District and elsewhere within the State of Texas. Google has committed acts of infringement in this District and within Texas by making, using, selling, offering for sale, or importing into the United States products that infringe one or more claims of the Patents-in-Suit as set forth herein. Further, Google encourages others within this District to use, sell, offer to sell, or import certain mobile products that infringe one or more claims of the Patents-in-Suit. For example, Google advertises its mobile devices, such as its smart phones, through its websites: https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem; <https://www.google.com/nexus/>. Further, Google provides its customers with information regarding the various functionalities offered by its products and software, such as its various battery saving modes: <https://support.google.com/pixelphone/answer/6187458>, <https://developer.android.com/training/monitoring-device-state/index.html>.

6. Google actively solicits customers within this District and the State of Texas and has sold many of its infringing mobile products to residents of Texas and this District.

7. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400.

THE PATENTS-IN-SUIT

8. On December 13, 2011, the United States Patent and Trademark Office ("USPTO") duly and legally issued U.S. Patent No. 8,078,158, titled "Provisioning Applications

for a Mobile Device,” to inventor Ari Backholm (“the ’158 Patent”). A true and correct copy of the ’158 Patent is attached as Exhibit A to this Complaint.

9. On August 19, 2014, the USPTO duly and legally issued U.S. Patent No. 8,811,952, titled “Mobile Device Power Management in Data Synchronization Over a Mobile Network With or Without a Trigger Notification,” to inventors Trevor Fiatal *et al.* (“the ’952 Patent”). A true and correct copy of the ’952 Patent is attached as Exhibit B to this Complaint.

10. On January 26, 2016, the USPTO duly and legally issued U.S. Patent No. 9,247,019, titled “Mobile Application Traffic Optimization,” to inventors Michael Luna *et al.* (“the ’019 Patent”). A true and correct copy of the ’019 Patent is attached as Exhibit C to this Complaint.

11. On April 26, 2016, the USPTO duly and legally issued U.S. Patent No. 9,325,600, titled “Offloading Application Traffic to a Shared Communication Channel for Signal Optimization in a Wireless Network for Traffic Utilizing Proprietary and Non-Proprietary Protocols,” to inventors Rami Alisawi *et al.* (“the ’600 Patent”). A true and correct copy of the ’600 Patent is attached as Exhibit D to this Complaint.

12. On May 24, 2016, the USPTO duly and legally issued U.S. Patent No. 9,351,254, titled “Method for Power Saving in Mobile Devices by Optimizing Wakelocks,” to inventors Ari Backholm *et al.* (“the ’254 Patent”). A true and correct copy of the ’254 Patent is attached as Exhibit E to this Complaint.

13. On July 5, 2016, the USPTO duly and legally issued U.S. Patent No. 9,386,433 titled “System and Method for Providing a Network Service in a Distributed Fashion to a Mobile Device,” to inventor Trevor Fiatal (“the ’433 Patent”). A true and correct copy of the ’433 Patent is attached as Exhibit F to this Complaint.

14. On September 13, 2016, the USPTO duly and legally issued U.S. Patent No. 9,444,812, titled “Systems and Methods for Authenticating a Service,” to inventors Jay Sutaria *et al.* (“the ’812 Patent”). A true and correct copy of the ’812 Patent is attached as Exhibit G to this Complaint.

15. On December 6, 2016, the USPTO duly and legally issued U.S. Patent No. 9,516,127, titled “Intelligent Alarm Manipulator and Resource Tracker,” to inventors Abhay Nirantar *et al.* (“the ’127 Patent”). A true and correct copy of the ’127 Patent is attached as Exhibit H to this Complaint.

16. On December 6, 2016, the USPTO duly and legally issued U.S. Patent No. 9,516,129, titled “Mobile Application Traffic Optimization,” to inventors Michael Luna *et al.* (“the ’129 Patent”). A true and correct copy of the ’129 Patent is attached as Exhibit I to this Complaint.

17. On January 24, 2017, the USPTO duly and legally issued U.S. Patent No. 9,553,816, titled “Optimizing Mobile Network Traffic Coordination Across Multiple Applications Running on a Mobile Device,” to inventors Michael Luna *et al.* (“the ’816 Patent”). A true and correct copy of the ’816 Patent is attached as Exhibit J to this Complaint.

18. SEVEN owns the entire right and title to each of the Patents-in-Suit.

BACKGROUND

19. For nearly two decades, SEVEN has researched and developed innovative software solutions for mobile devices directed to enhancing the user experience. For example, SEVEN has developed software technologies to manage mobile traffic in order to conserve network and battery resources. Software applications on mobile devices frequently signal the network for a variety of reasons. Much of the signaling from these software applications is

unnecessary and simply consumes precious bandwidth and remaining battery power. This needless mobile traffic negatively impacts the user's overall experience by creating service overloads and outages and draining the limited battery of the mobile device. SEVEN's technologies are able to optimize mobile traffic to conserve both network and battery resources. Other technologies developed by SEVEN include systems to provide device-ready mobile applications and authentication mechanisms to protect user information.

20. SEVEN has been recognized in the industry for its innovative technologies and products. For example, at the Mobile World Congress in 2011, the GSMA awarded SEVEN with its Global Mobile Award for Best Technology Breakthrough. Further, in 2013 SEVEN won the Mobile Merit Award for its outstanding innovations in the mobile industry and was identified as one of fifty mobile companies to watch by AlwaysOn. SEVEN was also awarded the Best Free Android App in 2013 by TechRadar. Additionally, and among other industry recognition, Telecoms.com identified SEVEN in its Best LTE Traffic Management Product Short List.

21. Battery life for mobile devices is a major driver for consumer purchasing decisions. In a 2014 poll by Ubergizmo of 50,000 participants, battery life was rated as a smartphone's most important feature. Google recognizes the importance of battery life in mobile devices and has incorporated software technologies for conserving battery life in its devices and operating systems. As described below, Google's mobile devices and operating systems also implement software to manage mobile traffic to save battery power. These devices and systems infringe SEVEN's innovative and patented technology.

22. Additionally, Google has implemented other technologies that infringe SEVEN's patents. For example, Google's systems provide users with device-ready mobile applications, rather than require users to configure such applications to meet the specific requirements of their

respective devices. With the number of devices having different sizes, speed, and software, streamlining the process of providing the appropriate mobile applications to a particular device is important to enhancing user experience. Further, Google also provides 2-Step Verification mechanisms to protect a user's personal information. As described below, Google infringes SEVEN's patents which are directed to these enhancements to the user's experience.

COUNT 1

(Infringement of U.S. Pat. No. 8,078,158)

23. Google infringes at least claim 10 of the '158 Patent under at least 35 U.S.C. §271(a). The Google practices every step of at least claim 10 in the United States.

24. Claim 10 of the '158 Patent is directed to a method for provisioning an application for a mobile device comprising: (1) responsive to detecting selection of the application made at the mobile device, identifying, from the mobile device, user information and the mobile device information of the mobile device; (2) wherein, the user information and mobile device information concerning the mobile device are provided to a network server for use in determining requirements for operating the application on the mobile device; (3) wherein, the user information is stored in device memory or on a SIM card of the mobile device; (4) provisioning the application on the mobile device based on the requirements for operating the application; and (5) wherein, the requirements for operating the application, specifies components to be installed to provision the application on the mobile device.

25. Google, through its Google Play Store, practices each step of at least claim 10 of the '158 Patent. Google Play is a service that allows users to download mobile applications to their mobile devices. After registering an account, Google Play identifies certain user authentication information and the mobile device's identification number when a user selects an

application for downloading. For example, the user's login information and mobile device information is stored in the mobile device's memory and provided to Google Play during communications with the store. Google Play utilizes the user and device information to determine requirements for operating the software application on the user's mobile device. From the user and device information, Google Play is able to determine certain specifications of the mobile device, such as screen size or the version of operating system used by the mobile device, among other user and device characteristics that may impact the operation of the application on the mobile device. For example, Google Play applies "Filters" to determine only those applications that are compatible with the mobile device. Google Play uses the requirements for operating the software application to identify the appropriate software components for the mobile devices to be installed to provision the application. Google Play provisions the application on the mobile device based on the determined requirements.

26. Google has had notice of the '158 Patent and its infringement since at least as early as the filing of this lawsuit. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 10 of the '158 patent.

COUNT 2

(Infringement of U.S. Pat. No. 8,811,952)

27. Google infringes at least claim 26 of the '952 Patent under 35 U.S.C. §271(a), (b), and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as the Pixel, that meet every limitation of at least claim 26.

28. Claim 26 of the '952 Patent is directed to a mobile device with a processor configured to: (1) exchange transactions with a client operating in a network through a connection provided through a server coupled to the client; (2) automatically send

synchronization requests from the mobile device to the network on a periodic basis, wherein the periodicity of the synchronization requests occur at a frequency determined according to the remaining battery power on the mobile device; and (3) exchange synchronization communications with the client over the connection after sending each synchronization request.

29. Google's products infringe at least claim 26 of the '952 Patent. For example, the Pixel includes a Qualcomm Snapdragon processor and can operate in a variety of networks such as 3G, LTE, and WiFi. The Pixel also includes a touch screen user interface. Further, the Pixel includes internal memory for storing the device's operating system and other software applications. The Pixel utilizes the Android software operating system, such as Android 7.1 (also known as Nougat). The Pixel also includes a number of mobile applications that communicate with the applications' respective servers through the various networks to exchange communications between the mobile application and the application server. One example is the Gmail application. The mobile device, through its communications interface including the devices network antenna, exchanges communications between the Gmail application and the email servers using mobile or WiFi networks. To keep its information up-to-date and fresh, the Gmail application synchronizes with its respective email servers periodically, such as every 5, 10, 15, 30, or 60 minutes. In synchronizing, the Gmail application will request that the Pixel communicate—through the communications interface and network—a synchronization message to the email server. The email server will respond to the synchronization message from the Gmail application and return information back to the Pixel to be routed to the Gmail application. But through one or more of the devices' power saving modes, when the remaining battery power on the Pixel falls below some threshold amount, such as 15% or 5% remaining battery power, Gmail will stop synchronizing periodically.

30. Other Google products, including at least the Google Nexus 5X or 6P (referred to herein as “Nexus”) and the Pixel C, similarly infringe one or more claims of the ’952 Patent.

31. Google also induces infringement by end users of its mobile devices of at least claim 26 of the ’952 Patent. Google promotes and advertises the use of its mobile products, such as the Pixel, and especially the products’ capability to preserve remaining battery and avoid battery drain from background applications. Examples of Google’s promotional materials appear on the company’s website, such as <https://support.google.com/nexus/answer/6187458?hl=en>, and <https://support.google.com/pixelphone/answer/6187458?hl=en>. Further, Google actively encourages other mobile device providers such as Samsung to incorporate the infringing battery saving functionality in Samsung’s mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

32. Google contributes to the infringement by others of at least claim 26 of the ’952 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating system to companies, such as Samsung, that use the operating system on mobile products. The Android operating system includes the infringing power saving functionality to reduce battery drain from background applications. Google advertises these features on the company’s website, such as: <https://www.android.com/versions/lollipop-5-0/>, <https://www.android.com/versions/marshmallow-6-0/>, and <https://www.android.com/versions/nougat-7-0/>. Samsung, for example, includes the infringing functionality along with the Android operating systems on its mobile devices, such as the Galaxy S7, that are made, used, sold, or offered for sale within the United States, or imported into the United States. Similar to the Pixel, the Galaxy S7 manages traffic through the power saving

functionality of the Android operating system to conserve battery power and infringes at least claim 26 of the '952 Patent. The power saving functionality in the Android operating system is designed to save power by managing mobile traffic and has no substantial noninfringing uses.

33. Google has had notice of the '952 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to indirectly infringe the '952 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 26 of the '952 patent.

COUNT 3

(Infringement of U.S. Pat. No. 9,247,019)

34. Google infringes at least claim 1 of the '019 Patent under at least 35 U.S.C. §271(a), (b) and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as the Pixel, that meet every limitation of at least claim 1.

35. Claim 1 of the '019 Patent is directed to a mobile device configured to: (1) delay content requests made by multiple applications; (2) align content request using observed activity of a user of the mobile device that includes a time since a last key press and mobile device properties; (3) poll in accordance with the aligned content requests to satisfy content requests of at least some of the multiple mobile applications; (4) monitor the time since a last key press, and, when the time exceeds a predetermined time period, locally adjust the mobile device by suppressing the aligned content requests at the mobile device for a first suppression period, and after expiration of the first suppression period, transmit any aligned content requests; and (5) suppress subsequent content request at the mobile device for a second suppression period, where

the second suppression period is longer than the first suppression period.

36. In addition to the features described in previous paragraphs, Google's products, such as its Pixel, are capable of delaying and aligning content requests from mobile applications based on observed user activity. The Pixel includes a Qualcomm Snapdragon processor and can operate in a variety of networks such as 3G, LTE, and WiFi. The Pixel also includes a touch screen user interface. Further, the Pixel includes internal memory for storing the device's operating system and other software applications. The Pixel includes the Android 7.1 (also known as Nougat) operating system, and applications such as Gmail. The Pixel has multiple applications that send content requests. Additionally, the Pixel includes a Doze mode that reduces traffic from the mobile device when the device is not actively being used by its user, thereby reducing battery drain by mobile applications that are constantly signaling to their respective application servers. The Pixel is able to monitor the time since a button was last pressed, for example through the auto-off timer and last user activity time to determine when to turn the screen of the device off. Further, when the Pixel device detects that the screen is off and the device is unplugged for a certain amount of time, it enters Doze mode. Once in Doze mode, the Pixel is able to conserve battery resources by restricting the mobile applications' access to the network, and defers the mobile applications' requests until a maintenance window. As the requests from the mobile applications are deferred, the requests are also aligned such that when a maintenance window occurs the multiple mobile applications are allowed to communicate using the network. Following the maintenance window, the mobile applications' are once again restricted from accessing the network. When the device is stationary for a certain amount of time the system applies the restrictions to network access for longer and longer periods between maintenance windows. The figure below illustrates the reduction in traffic from the Pixel

provided by Doze.

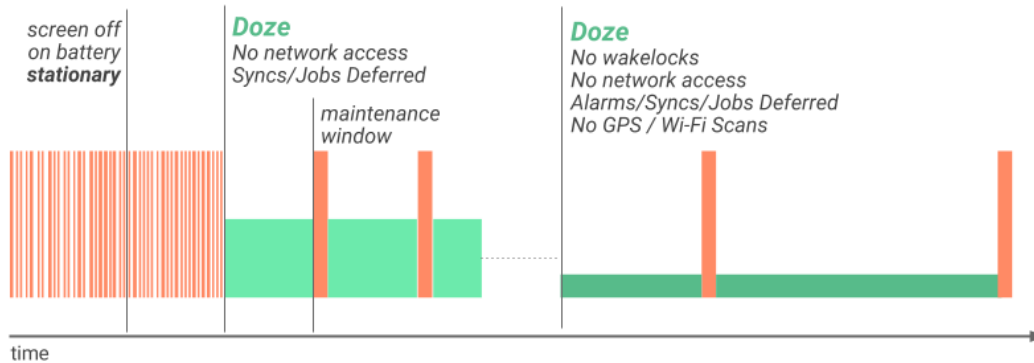


Figure 2. Illustration of how Doze applies a second level of system activity restrictions after the device is stationary for a certain time.

37. Other Google products similarly infringe one or more claims of the '019 Patent.

Such other products include Google's Nexus and Pixel C devices.

38. Google also induces infringement by end users of its mobile devices of at least claim 1 of the '019 Patent. Google promotes and advertises the use of its products, especially the products' capability to preserve remaining battery and avoid battery drain from background applications. The Doze feature is enabled in Google's devices by default. Examples of Google's promotional materials appear on the company's website, such as

<https://www.android.com/versions/marshmallow-6-0/>,

<https://www.android.com/versions/nougat-7-0/>, and

https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem. Further, Google actively encourages other mobile device providers such as Samsung to incorporate the above-described infringing functionality in Samsung's mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

39. Additionally, Google contributes to the infringement by others of at least claim 1 of the '019 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating

system to companies such as Samsung that use the operating system on their products such as the Galaxy S7. The Android operating system includes infringing power saving functionalities such as Doze to avoid battery drain from background applications, especially when the device is not being actively used by the user. Google advertises these features on the company's website, such as: <https://www.android.com/versions/marshmallow-6-0/> and <https://www.android.com/versions/nougat-7-0/>. Samsung includes the above-described infringing functionality along with the Android operating systems on its mobile devices, such as the Galaxy S7, that are made, used, sold, or offered for sale within the United States, or imported into the United States. Similar to the Pixel, the Galaxy S7 utilizes Doze to manage mobile traffic from the device, thereby conserving battery power, and infringes at least claim 1 of the '019 Patent. The Doze functionality in the Android operating system is enabled by default, designed to conserve battery resources by managing mobile traffic, and has no substantial noninfringing uses.

40. Google has had notice of the '019 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to indirectly infringe the '019 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 1 of the '019 patent.

COUNT 4

(Infringement of U.S. Pat. No. 9,325,600)

41. Google infringes at least claim 7 of the '600 Patent under at least 35 U.S.C. §271(a), (b) and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as the Pixel, that meet every limitation of at least claim 7.

42. Claim 7 of the '600 Patent is directed to memory and code to implement a processor controlled system for reducing network traffic, comprising: (1) blocking a first channel such that network signaling and battery consumption are reduced, wherein the first channel includes a non-common channel; (2) offloading application traffic of an application onto a second channel, wherein the second channel includes a common channel; (3) monitoring the application traffic of the application over the second channel; (4) unblocking the first channel based on the monitored application traffic over the second channel so that the application can perform an action; and (5) re-blocking the first channel after the action has been completed.

43. In addition to features described in previous paragraphs, Google's products, such as its Pixel, have memory and code to utilize common and non-common channels for application traffic and are capable of reducing network traffic by blocking the non-common channel to prevent applications from constantly communicating in the background using the non-common channels and draining battery resources. For example, mobile applications communicate with their respective servers by establishing application-specific connections to transmit information between the application on the mobile device and the application server in the network. Software applications on the mobile device are not able to utilize the application-specific connections established by other applications. To conserve battery by reducing network traffic, the Pixel is able to block the application-specific connections. For example, the Pixel includes the Doze functionality that restricts a mobile application's access to the network. But to avoid users missing critical information, the Pixel allows applications to receive messages using a common channel when the application-specific channels are blocked. For example, when in Doze, the Pixel offloads application traffic onto the Google Cloud Messaging ("GCM") channel or Firebase Cloud Messaging channel ("FCM"), which is shared among all applications on the

Pixel. Through GCM/FCM high priority messages directed to the applications may be delivered even when the application-specific channels are blocked. The Pixel monitors traffic over the GCM/FCM channel such that when messages are received for particular applications, the system unblocks the application-specific channels so that the application may respond to the received message. After the application has performed the task associated with the received message, the application-specific channel is once again blocked to conserve battery and reduce network traffic.

44. Other Google products similarly infringe one or more claims of the '600 Patent. Such other products include Google's Nexus and Pixel C devices.

45. Google also induces infringement by end users of its mobile products of at least claim 7 of the '600 Patent. Google promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. The Doze functionality is enabled on Google's devices by default. Examples of Google's promotional materials appear on the company's website, such as <https://www.android.com/versions/marshmallow-6-0/>, <https://www.android.com/versions/nougat-7-0/>, and https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem. Further, Google actively encourages other mobile device providers such as Samsung to incorporate the above-described infringing functionality in Samsung's mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

46. Google contributes to the infringement by others of at least claim 7 of the '600 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating system to

companies such as Samsung that use the operating system on their products such as the Galaxy S7. The Android operating system includes power saving functionalities such as Doze to avoid against battery drain from background applications, especially when the device is not being actively used by the user. Google advertises these features on the company's website, such as: <https://www.android.com/versions/marshmallow-6-0/> and <https://www.android.com/versions/nougat-7-0/>. Samsung includes the above-described infringing functionality along with Android operating systems on its mobile devices, such as the Galaxy S7, that Samsung makes, uses, sells, or offers to sell within the United States, or imports into the United States. Similar to the Pixel, the Galaxy S7 utilizes Doze to manage mobile traffic application specific channels but also is capable of offloading certain traffic to common channels and infringes at least claim 7 of the '600 Patent. The Doze functionality in the Android operating system is enabled by default, is designed to manage mobile traffic and has no substantial noninfringing uses.

47. Google has had notice of the '600 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to indirectly infringe at least claim 7 of the '600 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 7 of the '600 patent.

COUNT 5

(Infringement of U.S. Pat. No. 9,351,254)

48. Google infringes at least claim 1 of the '254 Patent under at least 35 U.S.C.

§271(a), (b), and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as the Pixel, that meet every limitation of at least claim 1.

49. Claim 1 of the '254 Patent is directed to a mobile device comprising a screen, memory, and processor configured to: (1) acquire a system wakelock in response to an application wakelock acquisition request; (2) detect an activity state of the mobile device based on a status of the display screen; (3) enter a power optimization state based on the detected activity state; (4) release the system wakelock based upon entering the power optimization state when the application that made the acquisition request is not critical to user experience, wherein the application is non-critical when the application is not identified on a whitelist; and (5) acquire the system wakelock in response to a subsequent wakelock request from another application on the mobile device when the another application making the subsequent wakelock acquisition request is identified on the whitelist.

50. As described in previous paragraphs, Google's products, such as its Pixel, include a screen, memory, and processor. The devices also manage the use of the central processing unit ("CPU") by software applications on the mobile device. For example, even when the Pixel is sleeping or otherwise in a power saving state, certain software applications are able to use the CPU. Software applications are able to use the CPU by utilizing a wakelock or other request to the system that allows the CPU to stay on for certain purposes. For example, the alarm application or the phone functionality needs to work even when the device is sleeping or in a power saving state and accordingly requires the CPU to process certain tasks. These applications would issue a request to the system to use the CPU even when the device is sleeping. The system then issues a wakelock that allows the CPU to continue working when it would otherwise be put to sleep, such as when the user is not actively using the mobile device. Some applications

take advantage of these wakelock requests and use the CPU for actions that are not critical to the user experience, such as background communications when the device is not actively being used. Such misbehaving applications unnecessarily drain battery resources. The Pixel manages which applications have permission to use the CPU and battery resources when the device is sleeping or in a power saving state. As an example, the Pixel may acquire a system wakelock when an application, such as the alarm application, issues a wakelock request. The Pixel also detects whether the device is in use by, among other things, monitoring the screen, whether the device is unplugged, and whether the device has been stationary for a certain amount of time. The Pixel enters Doze mode based on one or more of these monitored activities. In Doze mode, the Pixel will release the system wakelock when the application that made the wakelock request does not have permission to use CPU resources during this power saving state. The Pixel can issue another system wakelock in response to another wakelock request when the application making the request is identified as having the necessary permissions to utilize the CPU.

51. Other Google products similarly infringe one or more claims of the '254 Patent. Such other products include Google's Nexus and Pixel C devices.

52. Google also induces infringement by end customers of its mobile products of at least claim 1 of the '254 Patent. Google promotes and advertises the use of its products, especially the products' capability to preserve remaining battery and avoid battery drain from background applications. The Doze functionality is enabled on Google's mobile devices by default. Examples of Google's promotional materials appear on the company's website, such as <https://www.android.com/versions/marshmallow-6-0/>, <https://www.android.com/versions/nougat-7-0/>, and https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem. Further, Google actively

encourages other mobile device providers such as Samsung to incorporate the above-described infringing functionality in Samsung's mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

53. Google contributes to the infringement by others of at least claim 1 of the '254 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating system to companies such as Samsung that use the operating system on their products such as the Galaxy S7. The Android operating system includes power saving functionalities such as Doze to avoid against battery drain from background applications, especially when the device is not being actively used by the user. Google advertises these features on the company's website, such as: <https://www.android.com/versions/marshmallow-6-0/> and <https://www.android.com/versions/nougat-7-0/>. Samsung includes the above-described infringing functionality along with the Android operating systems on its mobile devices, such as the Galaxy S7, that Samsung makes, uses, sells, or offers to sell within the United States, or imports into the United States. Similar to the Pixel, the Galaxy S7 utilizes Doze to manage mobile applications when the device is not actively being used such as through the management of wakelock requests, and infringes at least claim 1 of the '254 Patent. The Doze functionality in the Android operating system is enabled by default, designed to manage mobile traffic when the device is not actively being used and has no substantial noninfringing uses.

54. Google has had notice of the '254 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to

indirectly infringe at least claim 1 of the '254 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 1 of the '254 patent.

COUNT 6

(Infringement of U.S. Pat. No. 9,386,433)

55. Google infringes at least claim 1 of the '433 Patent under at least 35 U.S.C. §271(a). Google makes, uses, sells, offers to sell, or imports into the United States the Google Play store which meets every limitation of at least claim 1.

56. Claim 1 of the '433 Patent is directed to a system for providing mobile network services comprising: (1) a first server communicatively coupled to a mobile device over a mobile network, the first server configured to: receive a unique authentication token from the mobile device over the mobile network; and provide a service to the mobile device via the mobile network, wherein the service is associated with the unique authentication token and branded by an entity other than an entity that operates the mobile network; (2) wherein the service is provided by: the first server transmitting a list of available digital content stored at the first server to the mobile device, and transferring a representation of at least a portion of the digital content to the mobile device in response to a user selection; (3) a second server configured to monitor usage of the mobile network by the mobile device, the usage related to the service associated with the unique authentication token and provided to the mobile device by the first server; and (4) wherein the second server is controlled by an entity other than an entity that operates the mobile network.

57. Google Play provides Google's customers with digital content services including providing software applications, music, and other digital media. Google Play consists of a number

of servers. When using the Google Play app, one or more of these servers are communicatively coupled to a user's mobile device over a mobile network such as 3G, LTE, or WiFi. The server is configured to receive a unique authentication token from a user's mobile device and provide a service to the mobile device associated with that authentication token. For example, Google's users register an account with Google Play. Google uses the login information, or a login authorization number unique to the user, when providing the digital content services to the user. Google's Play service is available using a number of different mobile networks, including those operated by Sprint, AT&T, Verizon, or other Internet Service Providers. An example of Google's service includes its Entertainment section where users can download certain movies and other video content. After logging in, Google Play provides the user with a list of available digital content that is stored on the Google Play servers. The servers are also capable of providing a portion of the digital content to the mobile device after a user makes a particular selection. For example, clips of available movies are provided to the users. Certain Google Play servers are configured to monitor the use of the mobile network by the mobile device when using the Google Play service. As a few examples, in addition to monitoring active downloads, Google Play also maintains a history of the user's searches, downloads, and purchases made through Google Play. The servers for monitoring network usage are part of Google Play and not controlled by entities that operate the mobile network, such as the ISPs.

58. Google has had notice of the '433 Patent and its infringement since at least as early as the filing of this lawsuit. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 1 of the '433 patent.

COUNT 7

(Infringement of U.S. Pat. No. 9,444,812)

59. Google infringes at least claim 1 of the '812 Patent under at least 35 U.S.C.

§271(a). Google's practices every step of at least claim 1 in the United States.

60. Claim 1 of the '812 Patent is directed to a method for authenticating a user to provide a service, the method comprising: (1) storing information associated with a user of a first device on a server, wherein the stored information includes a phone number associated with a second device of the user and is stored during an event; (2) wherein additional information is needed to authenticate the first device to provide a service; (3) querying the user for additional information to authenticate the first device to provide the service; (4) wherein the additional information has a length of time in which the additional information is valid; (5) querying the user to verify the phone number associated with the second device provided during the event before sending one or more communications associated with providing the service to the first device; and (6) sending, based on the stored information and the additional information, the one or more communications to provide the service.

61. Google practices each step of at least claim 1 of the '812 Patent through its registration and 2-Step Verification process. For example, when a user registers an account with Google, Google stores information associated with the user. In its servers, Google stores the user's name, username, password, mobile device number, among other information. Users are able to use the stored username and password to access certain Google services, such as Gmail, Google Play, or other services, from their computers or mobile devices. Additionally, Google provides 2-Step Verification, which further safeguards users. During the 2-Step Verification, in addition to the username and password entered using, for example the user's computer or tablet,

Google requests an additional code from the user to access Google services. This code is sent by Google to the user's smartphone using the phone number associated with the user's account. This code is valid for only a certain amount of time. Additionally, Google queries the user to verify the phone number associated with the second device provided during the initial registration when turning on 2-Step Verification. This query is done before Google sends communications associated with the service the user is attempting to access using 2-Step Verification. Once Google has verified the user through the 2-Step process, Google will send communications associated with the service to the user.

62. Google has had notice of the '812 Patent and its infringement since at least as early as the filing of this lawsuit. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 1 of the '812 patent.

COUNT 8

(Infringement of U.S. Pat. No. 9,516,127)

63. Google infringes at least claim 10 of the '127 Patent under at least 35 U.S.C. §271(a), (b) and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as its Pixel, that meet every limitation of at least claim 10.

64. Claim 10 of the '127 Patent is directed to a mobile device with a memory and processor configured to: (1) enter a power save mode based on a backlight status and sensed motion of a mobile device; (2) delay a timing of one or more triggers for multiple applications on the mobile device, wherein the timing is delayed such that the triggers execute within a window of time and wherein at least a subset of the triggers are associated with wakelocks; and (3) exit the power save mode when the backlight of the mobile device turns on or motion of the mobile device is sensed.

65. In addition to features described in previous paragraphs, Google's products, such as the Pixel, enter a power save mode such as Doze, when the device is unplugged and stationary for a period of time, with the screen off. Doze conserves remaining battery resources of the Pixel by, among other things, deferring jobs and alarms for the software applications on the device. The jobs and alarms from the software applications on the Pixel are delayed until a maintenance window. During the maintenance window, the Pixel will run all the delayed jobs and alarms for the software applications. At least a subset of the jobs and alarms are associated with wakelocks, such as those scheduled through AlarmManager. The Pixel will exit Doze mode when, among other things, the device's screen is turned on.

66. Other Google products similarly infringe one or more claims of the '127 Patent. Such other products include Google's Nexus and Pixel C devices.

67. Google also induces infringement by end users of its mobile products of at least claim 10 of the '127 Patent. Google promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. The Doze functionality is enabled on Google's mobile devices by default. Examples of Google's promotional materials appear on the company's website, such as <https://www.android.com/versions/marshmallow-6-0/>, <https://www.android.com/versions/nougat-7-0/>, and https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem. Further, Google actively encourages other mobile device providers such as Samsung to incorporate the above-described infringing functionality in Samsung's mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

68. Additionally, Google contributes to the infringement by others of at least claim 10

of the '127 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating system to companies such as Samsung that use the operating system on their products such as the Galaxy S7. The Android operating system includes power saving functionalities such as Doze to avoid against battery drain from background applications, especially when the device is not being actively used by the user. Google advertises these features on the company's website, such as: <https://www.android.com/versions/marshmallow-6-0/> and <https://www.android.com/versions/nougat-7-0/>. Samsung includes the above-described infringing functionality along with the Android operating systems on its mobile devices such as the Galaxy S7 that Samsung makes, uses, sells, or offers to sell within the United States, or imports into the United States. Similar to the Pixel, the Galaxy S7 utilizes Doze to manage mobile traffic from the device, thereby conserving battery power, and infringes at least claim 10 of the '127 Patent. The Doze functionality in the Android operating system is enabled by default, designed to manage mobile traffic and has no substantial noninfringing uses.

69. Google has had notice of the '127 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to induce others to infringe at least claim 10 of the '127 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 10 of the '127 patent.

COUNT 9

(Infringement of U.S. Pat. No. 9,516,129)

70. Google infringes at least claim 1 of the '129 Patent at least under 35 U.S.C. §271(a), (b), and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as the Pixel, that meet every limitation of at least claim 1.

71. Claim 1 of the '129 Patent is directed to a mobile device comprising a radio, user interface, memory, and processor configured to: (1) enter a first power management mode, wherein to enter the first power management mode is based on input from a user; (2) while in the first power management mode, block transmission of outgoing application data requests for at least one application executing in a background of the mobile device and allow transmission of outgoing application data requests for at least one application executing in a foreground of the mobile device; (3) enter a second power management mode, wherein entry into the second power management mode is based on a detected activity status, wherein the detected activity status is based on a backlight status of the mobile device being off; and (4) while in the second power management mode, block transmission of outgoing application data requests for at least one application executing in background of the mobile device for a predetermined period of time.

72. As described in previous paragraphs, Google's products, such as the Pixel, have a user interface, memory, and processor. The Pixel also has a radio or antenna to allow for communications to the network. Additionally, these products have several power management modes which help to extend battery life and conserve network resources. For example, the Pixel has a Battery Saver mode that blocks communications from applications running in the background of the device. A user may enter the Battery Saver mode by input through the touch screen interface of the device. This Battery Saver mode, however, will allow certain applications

to continue accessing the network when the application is being used directly by the user.

Additionally, Google's products include other power saving modes, such as Doze. When in Doze, the Pixel stops outgoing messages from applications until a maintenance window when those applications may temporarily communicate with the network. The Pixel will enter Doze when the device is unplugged and the screen of the device is off.

73. Other Google products similarly infringe one or more claims of the '129 Patent. Such other products include Google's Nexus and Pixel C devices.

74. Google also induces infringement by end users of its mobile products of at least claim 1 of the '129 Patent. Google promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. The Doze and battery saver functionalities are included in Google's mobile devices by default. Examples of Google's promotional materials appear on the company's website, such as <https://www.android.com/versions/marshmallow-6-0/>, <https://www.android.com/versions/nougat-7-0/>, and https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem. Further, Google actively encourages other mobile device providers such as Samsung to incorporate the above-described infringing functionality in Samsung's mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

75. Additionally, Google contributes to the infringement by others of at least claim 1 of the '129 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating system to companies, such as Samsung that use the operating system on their products such as the Galaxy S7. The Android operating system includes power saving functionalities to avoid

against battery drain from background applications. Google advertises these features on the company's website, such as: <https://www.android.com/versions/marshmallow-6-0/> and <https://www.android.com/versions/nougat-7-0/>. Samsung includes the above-described infringing functionality with the Android operating systems on its mobile devices, such as the Galaxy S7, that Samsung makes, uses, sells, or offers to sell within the United States, or imports into the United States. Similar to the Pixel, the Galaxy S7 manages traffic through the power saving functionalities of the Android operating system, such as Battery saver and Doze, to conserve battery power, and infringes at least claim 1 of the '129 Patent. The power saving functionalities in the Android operating system are included by default, designed to manage mobile traffic and have no substantial noninfringing use.

76. Google has had notice of the '129 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to induce others to infringe at least claim 1 the '129 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 1 of the '129 patent.

COUNT 10

(Infringement of U.S. Pat. No. 9,553,816)

77. Google infringes at least claim 9 of the '816 Patent under at least 35 U.S.C. §271(a), (b), and (c). Google makes, uses, sells, offers to sell, or imports into the United States products, such as the Pixel, that meet every limitation of at least claim 9.

78. Claim 9 of the '816 Patent is directed to a mobile device with memory and

processor configured for: (1) determining a time a first application on the mobile device was last accessed; (2) determining whether the first application is inactive based on the time the application was last accessed, wherein when the application is determined to be inactive the processor can (3) adjust behavior of the mobile device for traffic from the first application by blocking outgoing network traffic from the first application for a first period of time and allowing outgoing network traffic from the first application after the first period of time for a second period of time while allowing outgoing network traffic for a second application; (4) receive a message directed towards the first application during the first period of time, wherein the message is received from an intermediary server that provides connectivity between an application server for the first application and the mobile device; (5) allow outgoing network traffic from the application when the mobile device is plugged into an external power source; and (6) wherein a frequency of communications directed toward the first application is altered by the adjusting behavior of the mobile device for traffic from the first application.

79. In addition to the features described in previous paragraphs, Google's products, such as the Pixel, manage traffic from individual mobile applications. For example, when individual applications have not been accessed by the user after a period of time, those applications will be placed in a standby mode. Mobile applications communicate with the network even when such applications are not actively in use by the user. Such background communications drain battery and network resources. To conserve these resources, the Pixel determines when an application was last accessed by a user, and determines that an application is inactive based on that last access. When an application is determined to be inactive, or idle, the Pixel will block any jobs or syncs that the application may attempt to perform. For example, by blocking synchronization messages, the frequency of communications directed to the first

application is altered. But to ensure that the information for the mobile application does not become stale, the Pixel will allow the inactive mobile application to temporarily access the network. During this temporary access time, the Pixel will allow multiple applications to communicate with the network. Doing so allows the Pixel to use battery and network resources efficiently. Further, to avoid missing important messages directed to the inactive application, the Pixel is still able to receive messages for the inactive application even when the application is in standby mode. For example, the Pixel will receive a message directed toward the inactive application through GCM or FCM, which are intermediary servers that can connect application servers to the mobile device. The Pixel will allow the inactive mobile application to exit standby mode when the mobile device is plugged into an external power source, such as the wall outlet.

80. Other Google products similarly infringe one or more claims of the '816 Patent. Such other products include Google's Nexus and Pixel C devices.

81. Google also induces infringement by end users of its mobile products of at least claim 9 of the '816 Patent. Google promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. The application standby functionality is enabled on Google's mobile devices by default. Examples of Google's promotional materials appear on the company's website, such as <https://www.android.com/versions/marshmallow-6-0/>, <https://www.android.com/versions/nougat-7-0/>, and https://madeby.google.com/phone/?utm_source=ads-en-ha-na-sem. Further, Google actively encourages other mobile device providers such as Samsung to incorporate the above-described infringing functionality in Samsung's mobile devices that Samsung makes, uses, sells, or offers for sale within the United States, or imports into the United States.

82. Additionally, Google contributes to the infringement by others of at least claim 9 of the '816 Patent by offering to sell or selling within the United States its Android operating system. For example, in exchange for consideration, Google provides its Android operating system to companies, such as Samsung that use the operating system on their products such as the Galaxy S7. The Android operating system includes power saving functionalities to avoid against battery drain from background applications, such as App Standby. Google advertises these features on the company's website, such as:

<https://www.android.com/versions/marshmallow-6-0/> and

<https://www.android.com/versions/nougat-7-0/>. Samsung includes the above-described infringing functionality with the Android operating systems on its mobile devices, including the Galaxy S7, that Samsung makes, uses, sells, or offers to sell within the United States, or imports into the United States. Similar to the Pixel, the Galaxy S7 manages traffic for inactive applications through the power saving functionalities of the Android operating system to conserve battery power, and infringes at least claim 9 of the '816 Patent. This power saving functionality in the Android operating system is enabled by default, is designed to manage mobile traffic and have no substantial noninfringing use.

83. Google has had notice of the '816 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Google's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Google's specific intent to induce others to infringe at least claim 9 of the '816 Patent. Despite having knowledge of its infringement, Google continues to intentionally and willfully infringe at least claim 9 of the '816 patent.

PRAYER FOR RELIEF

SEVEN requests that judgment be entered in its favor and against Google as follows:

- a. Entering judgment declaring that Google has infringed one or more claims of the Patents-in-Suit in violation of 35 U.S.C. §271;
- b. Ordering that SEVEN be awarded damages in an amount no less than a reasonable royalty for each asserted patent arising out of Google's infringement of the Patents-in-Suit, together with any other monetary amounts recoverable by SEVEN, such as treble damages;
- c. Declaring that Google's infringement has been willful;
- d. Declaring this an exceptional case under 35 U.S.C. §285 and awarding SEVEN its attorneys' fees; and
- e. Awarding SEVEN such other costs and further relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, SEVEN demands a trial by jury on all issues so triable.

Dated: May 17, 2017

Respectfully submitted by:

/s/ Bruce Sostek

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